

CLAIMS

What is claimed is:

1. A method of generating an infectious clone, said infectious clone based upon a positive strand RNA virus's genome, said method comprising:

producing a recombinant nucleic acid comprising at least one full-length DNA copy or at least one *in vitro*-transcribed RNA copy or a derivative of either said at least one DNA copy or said at least one *in-vitro* transcribed RNA copy,

wherein the RNA virus's genome is at least about 15 kb.

2. A method of generating an infectious clone based upon an RNA virus's genome, said method comprising:

producing a recombinant nucleic acid comprising at least one full-length DNA copy or *in vitro*-transcribed RNA copy or a derivative of either, and

selecting infectious clones by transfecting a host cell with said recombinant nucleic acid wherein said host cell is not susceptible to infection to said virus.

3. The method according to claim 2 wherein said RNA virus is a positive strand RNA virus with a genome of at least about 15 kb.

4. The method according to claim 2 wherein said host cell is a BHK-21 cell.

5. A modified RNA virus comprising a recombinant nucleic acid, said recombinant nucleic acid comprising at least one full-length DNA copy or *in vitro*-transcribed RNA copy or a derivative of either.

6. A vaccine comprising a modified RNA virus, said modified RNA virus comprising a recombinant nucleic acid which comprises at least one full-length DNA copy or *in vitro*-transcribed RNA copy or a derivative of either.

7. A cell culture infected with a modified RNA virus, said modified RNA virus comprising a recombinant nucleic acid which comprises at least one full-length DNA copy or *in vitro*-transcribed RNA copy or a derivative of either.

8. A protein and/or antigen obtained from a cell culture according to claim 7.

9. A diagnostic assay using a protein and/or antigen of claim 8, said assay useful for diagnosis in an animal vaccinated with a vaccine based on the modified RNA virus.

10. A recombinant nucleic acid comprising an infectious clone produced by the method according to claim 1.

11. The recombinant nucleic acid of claim 10 wherein the infectious clone is based on the genome of a virus of the order *Nidovirales*.

12. The recombinant nucleic acid of claim 11 wherein the infectious clone is based on the genome of a virus of the family *Arteriviridae*.

13. The recombinant nucleic acid of claim 12 wherein the virus is PRRSV.

14. The recombinant nucleic acid molecule of claim 10 wherein the infectious clone further comprises at least one nucleic acid sequence encoding a virulence marker and/or a serological marker particular to said positive strand RNA virus, and wherein said at least one nucleic acid sequence has been modified to effect a change in virulence and/or a change in serological immune response *in vivo*.

15. The recombinant nucleic acid molecule of claim 14 wherein the nucleic acid sequence encoding said virulence or serological marker or virulence and serological markers is located within any of the genome's open reading frames encoding structural viral proteins.

16. The recombinant nucleic acid molecule of claim 10 wherein said infectious clone further comprises a nucleic acid sequence comprising at least one open reading frame and wherein said at least one open reading frame is substituted by an ORF7.

17. The recombinant nucleic acid molecule of claim 10 wherein at least one additional heterologous nucleic acid sequence is inserted, allowing the infectious clone to serve as a delivery system for an additional heterologous nucleic acid sequence.

18. The recombinant nucleic acid molecule of claim 17 wherein said heterologous nucleic sequence encodes an antigen.

19. The recombinant nucleic acid molecule of claim 10 wherein said infectious clone further comprises a nucleic acid sequence comprising at least one open reading frame, said at least one open reading frame having been modified to effect a change in virulence and/or a change in serological response *in vivo* in a cell into which the infectious clone has been introduced.

20. A modified RNA virus comprising the recombinant nucleic acid of claim 10.

21. A vaccine comprising the modified RNA virus of claim 20.
22. A cell culture infected with the modified RNA virus of claim 20.
23. A protein and/or antigen obtained from a cell culture according to claim 22.
24. A diagnostic assay using a protein and/or antigen of claim 23, said assay useful for diagnosis in an animal vaccinated with a vaccine based on the modified RNA virus.